Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §112 are respectfully requested.

The Examiner has rejected claims 1-3 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent 5,516,477 of Bauer et al. ("Bauer"). The Examiner contends that Bauer teaches a process for the production of washing and cleaning active surfactant granules, wherein a formulation containing a non-surface-active liquid component is introduced to a fluidized bed and granulated and, at the same time, totally or partially filled from the non-surface-active liquid compound, optionally with addition of an inorganic or organic solid, and wherein the granules are discharged from the fluidized bed via a grading step by a countercurrent air stream which is adjusted so that only particles above a predetermined size are removed from the fluidized bed while smaller particles are retained therein (see Abstract; and column 7, lines 1-9). The Examiner refers to Examples 1 and 9 for various operating conditions including an air base plate temperature of 100°C, a grading air temperature of 20°C and a temperature above the base plate of 81°C. However, many of the product and process parameters referred to by the Examiner are not claimed in the present claims.

The Examiner acknowledges that Bauer does not explicitly disclose reducing a flow speed of the process air supplied from below to the fluidizing space in an expansion zone located above the fluidizing space (step (f) of claim 1). Nevertheless, the Examiner concludes that it would be inherent for the flow speed of the fluidizing air to be reduced at the expansion zone above the fluidizing space because the air fluidizes the solid and liquid components such that the process would have reduced the initial flow speed of the air from below to the zone above the fluidizing space. It is therefore the Examiner's position that Bauer anticipates the claims. This rejection is respectfully but strenuously traversed for the reasons set forth in detail below.

The present invention relates to a method for the production of industrial detergents and detergent components in granulate or agglomeration form, which is distinguished by a homogenous combination of the individual raw material components, including the binder and moisture, in the granulate or agglomerate. The granulate or agglomerate also has a high stability with respect to mechanical demands, good dispersability in water, and has very little

dust or is nearly dust free. These granulates or agglomerates are achieved by a manufacturing process through fluidized bed agglomeration/granulation in an essentially horizontally-oriented fluidized bed. Here, a binder and/or components in the form of solutions, suspensions or melts are supplied to the solid material, for example the detergent powder, in the fluidized bed. As specified in claim 2, the binder including moisture can comprise about 1 to 35% of the finished product, but is not limited thereto.

The energy supplied by the process air effects a drying and solidification of the agglomerates/granulates forming in the dosing region of the fluidized bed. There, the supply temperature of the process air lies in the range of 20°C to the decomposition temperature of the component materials. By adjustment of the drying parameters the product moisture can be varied. Values from 0 mass % upwards, depending upon the liquid requirement, are possible. The particles carried off from the fluidized bed by the process air, in particular fine dust, are separated from the air in an expansion zone integrated into the fluidized bed apparatus provided with a cross-section broadening, and in a filter system connected thereto. These particles are then returned to the fluidized bed and agglomerated there to produce a product which is low in dust or dust free.

In contrast, the process of Bauer relates to the conversion of a liquid or paste-like formulations of washing and cleaning-active surfactant compounds into a storable and dust free granulate with increased apparent density. There, the surfactant formulations, which are present in liquid or paste form, are dried and granulated by fluidized bed granulation. These surfactant formulations can contain additional materials which are washing and cleaning agents. From Bauer it can only be ascertained that the liquid surfactant formulations are dried and granulated in a continuously operating granulating fluidized bed with appropriate process parameters. Bauer does not disclose or suggest the manufacture of granulated industrial detergents in which the homogenous fluidizing of the materials in the fluidized bed results in a uniform, homogenous mixture of the individual granulates or agglomerates from the individual raw material components, including the binder and corresponding moisture and by a mixture of the components. The present invention differs from Bauer not only in the object of the invention, but also in the corresponding solution to the problems of the prior art, so that the present invention is neither taught nor suggested by Bauer.

Turning to the specific process steps and the Examiner's arguments, it is noted that the Examiner does not specifically address most of the process steps in the present claims. One process step which is addressed by the Examiner is step (f) (see bottom of page 3 of the Office Action), for which the Examiner argues that it would be inherent from Bauer for the flow speed of the fluidizing air to be reduced at the expansion zone above the fluidizing space because the air fluidizes the solid and liquid components such that the process would have reduced the initial flow speed of the air from below to the zone above the fluidizing space. First of all, there is no support for this assumption of the Examiner. Second, applicants can find nothing in Bauer to suggest that Bauer's fluidized bed has an expansion zone located above the fluidizing space and that such an expansion zone is formed by cross-sectional widenings, as specifically stated in step (f) of claim 1. Therefore, the Examiner's contention of inherency is based upon hindsight from the specification of the present application and not from anything which is disclosed in Bauer. Without a disclosure in Bauer of an expansion zone, there can be no inherent reduction of the flow speed, or at least not the same degree of reduction of flow speed, from below the fluidizing space to above the fluidizing space. For this reason alone, the Examiner's rejection is improper.

However, in addition, Bauer also fails to disclose several other steps of the presently claimed invention. For example, the Examiner argues that the granules are discharged from the fluidized bed via a grading step by countercurrent air stream which is adjusted so that only particles above a predetermined size are removed from the fluidized bed while smaller particles are retained therein (see Abstract and column 7, lines 1-9). However, according to the presently claimed invention, it is the smaller particles and dust particles which are removed from the fluidizing space by the expansion zone and the integrated filter system of steps (f) and (g) of claim 1. These particles are returned to the fluidizing space for agglomeration with the particles therein. Such process steps are not taught or suggested by Bauer. While claim 1 of Bauer states that particles smaller than 50 microns in size are removed from the granules via a grading step by countercurrent air stream, there is no suggestion that these smaller particles are returned to the fluidized bed. Moreover, according to the presently claimed invention, the smaller particles are not removed by a countercurrent air stream, but by the process air supplied from below.

The Examiner also argues that the temperature of the grading air is 20°C and apparently equates this to the process air for cooling according to step (c) of the presently claimed invention. However, according to Bauer the fluidized air is cooled by heat loss and by the heat of evaporation of the constituents of the non-surface-active liquid component (column 7, lines 13-15).

In sum, not only are the purposes and results of the process of Bauer quite different from those of the presently claimed invention, but the process steps for carrying out the two methods are clearly distinguishable. The details of the process and apparatus used by Bauer to produce his granular surfactants are not described in any great detail, and the Examiner has improperly read into Bauer much more than is taught or suggested there. Such a reading of Bauer uses improper hindsight based upon the teaching and claims of the present invention. Accordingly, the rejection is improper and should be withdrawn.

In view of the above amendments, it is submitted that all of the claims in the application fully comply with the requirements of 35 U.S.C. §112. Further, in view of the above remarks, it is submitted that all of the claims in the application patentably distinguish over the prior art of record. Accordingly, reconsideration and withdrawal of the rejections and an early Notice of Allowance are respectfully requested.

Respectfully submitted,

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Marked Up Copy of Claim 1

1. (Amended) A process for manufacturing industrial detergents and industrial detergent components as a finished product in granulate or agglomerate form on a dry basis in an essentially horizontally oriented fluidized bed, comprising:

a) performing different process steps, including heating, agglomeration, coating, drying and cooling, for manufacturing the finished product in a single or multiple stage fluidized bed;

b) supplying solid powdered starting material in a first process step to the fluidized bed in an area of fluidizing space;

c) supplying process air to the different process steps from beneath the fluidized bed, wherein a process temperature or supply temperature for agglomeration of the product is a function of a decomposition temperature of individual [material] components of the finished product and lies in a range of about 20 to 300°C, and the process air for cooling has a temperature lying in a range of about –20 to +30°C;

d) supplying a binder, water and/or one or more [material] components in a form of solutions, suspensions or melts to the solid starting material in the fluidized bed in the area of the fluidizing space over an entire process range using a spray or injection system, wherein [the] a dry portion in [the] a spray medium comprises 0 to 100%;

e) fluidizing the individual components in the area of the fluidizing space to form a solid mixture comprising granulates of homogenous composition;

f) reducing a flow speed of the process air supplied from below to the fluidizing space in an expansion zone located above the fluidizing space and formed by cross-sectional widenings, such that a pre-separation of particles entrained from the fluidizing space and a return of the pre-separated particles into the fluidizing space occur; and

g) separating process dust with a dedusting mechanism in an integrated filter system adjoining above the expansion zone and returning the process dust to the fluidizing space.